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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 18

Application Number: 09/484,540  
Filing Date: January 18, 2000  
Appellant(s): SAWADA, KENICHI

**MAILED**

**MAY 17 2004**

Technology Center 2600

Deborah S. Gladstein  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed on February 17, 2004

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Claims 1-20 and 26-34 stand or fall together.

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix of Claims to the brief is correct.

**(9) Prior Art of Record**

US 5,361,147	Katayama et al.	11-1994
US 5,742,410	Suzuki	04-1998
US 5,430,557	Tamura et al.	07-1995
US 5,357,353	Hirota	10-1994

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-2, 7-12, 17-20, 26-27, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5361147 to Katayama et al. in view of US 5742410 to Suzuki.

As to claim 1, Katayama discloses a image processing apparatus for processing image data, the apparatus comprising:

an edge detecting portion for detecting an edge area in the image in accordance with the image data (col. 2 lines 25-65, col. 20, lines 9-39, col. 27 lines 31-32);

an edge enlarging portion for enlarging the edge data detected by the edge detection portion (col. 2, lines 63-66, col. 27, lines 39-41); and

a density correction portion for increasing or decreasing the density value of the image data of the edge data enlarged by the edge enlarging portion (col. 22, lines 47-61, col. 27 lines 59-63, note that replacing a color "with a value which frequently appears", average or median value constitutes increase or decrease the density value of the image data).

As to claims 26-27 and 31-34, the claims are the corresponding method claims to claims 1-2 and 7-10 respectively. The discussions are addressed with regard to claims 1-2 and 7-10.

As to claim 11, Katayama discloses all limitations except modifying the edge area according to the lightness information.

Suzuki, in an analogous environment, discloses a edge quantity detection circuit to detect the edge quantity (the edge area) according to the lightness values (col. 13, line 41-col. 15 line 26) , modifying the density portion in according with the lightness information (col. 4 line 41-col. 5 line 50) and increasing or decreasing the density of the edge area modified by the modifying portion (col. 4 line 41-col. 5 line 50, col. 11-15).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of Suzuki in the method of Katayama in order to accurately correct the edge area for better color correction.

As to claims 12, 17-20, the discussions are addressed with regard to claim 2, 7-10.

Claims 4-6, 14-16, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama and Suzuki, further in view of US 5430557 to Tamura et al. (a reference of record)

As to claims 4-5, Katayama does not explicitly mention controlling the enlarging degree.

Tamura, in an analogous environment, discloses a edge width controller for control the width of the edge, i.e., controlling the enlarging degree according to the

Katayama does not explicitly mention increasing at least a density of the black component in the image data includes color component and black component.

Suzuki, in an analogous environment, discloses increasing at least a density of the black component in the image data includes color component and black component (col. 4 line 41-col. 5 line 50,, especially col. 5 lines 14-15, col. 10 lines 53-60, col. 12 lines 5-65).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of Suzuki in the method of Katayama in order to accurately blacken the edge area for better color correction and encoding (Suzuki, abstract, col. 4).

As to claim 2, Katayama further discloses the edge detection portion uses a first order differential filter to determine the edge upon a predetermined threshold (col. 20 lines 10-46).

As to claim 3, Suzuki further discloses

As to claim 7, Katayama further discloses the edge enlarging portion enlarges the edge area but does not enlarge the outside of the edge (col. 27, lines 39-41).

As to claim 8, Katayama further discloses using luminance (lightness) component to detect edge area (col. 14, lines 1-47, col. 20, lines 10-34).

As to claim 9 and 10, Katayama further discloses using average or median density value to correct the edge ((col. 22, lines 47-61, col. 27 lines 59-63, note that Katayama utilizes replacing a color "with a value which frequently appears", average or median value).

controller responding to the kind of image (Fig. 5 element 44Y, col. 8 line 55-64, col. 12 lines 57-68).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of Tamura in the method of Katayama in order to accurately enlarge the edge area for better color correction.

As to claim 6, Katayama further discloses the image data is a monochromatic (black/white) or other kind is color image data (col. 14).

As to claims 28-30, the claims are the corresponding method claims to claims 4-6 respectively. The discussions are addressed with regard to claims 4-6.

Claims 3, 13 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama and Suzuki, further in view of US 5357353 to Hirata (a reference of record).

As to claim 3, Katayama does not explicitly mention increasing a density of black components and decreasing that of color components.

Hirota, in an analogous environment, discloses increasing a density of black components and decreasing that of color components in the black edge area (abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the scheme of Hirota in the method of Katayama in order to reduce the color deviation in the black character area (col. 1-col. 2).

As to claims 13 and 27, the claims are the corresponding method claims to claim 3 respectively. The discussions are addressed with regard to claim 3.

**(11) Response to Argument**

(A) The following discussion relates to the rejection of claims 1-2, 7-12, 17-20 , 26-27, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5361147 to Katayama et al. in view of US 5742410 to Suzuki.

1. Appellants' argument---- Appellant alleged that Katayama and Suzuki teach away from each other and one of ordinary skill in the art would not have been motivated to combine the references as suggested by the Examiner because "Katayama is directed to a technique for encoding color image without deteriorating image quality . According to Katayama, a black character area is enlarged to eliminated the black character area from the color image in order to encode the color image but not the black character area." as taught in Fig. 11A. "Suzuki, on the other hand, is directed to a technique for enhancing reproduction quality of black character and discloses a process for emphasizing a black character area (edge area)." (page 4, paragraph 2-5).

Examiner's response ---- The Examiner respectfully disagrees with Appellant. Appellant's argument reveals her misunderstanding of Katayama. in Fig. 11A, element 221, there is a **black character elimination and average value substitution unit**. (emphasis by the Examiner). The function of the unit is obtaining a universal density of the black character area for better encoding efficiency (col. 13, line 49-61), and the function is not that "a black character area is enlarged to eliminated the black character area from the color image in order to encode the color image but not the black character area" asserted by Appellant. In addition, the eliminated portion of the black character is substituted by the average value or another value so that "the black character pattern



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are entirely encoded, quality of black character can be maintained.” (col. 15, line 29-col. 16 line 45, note that with substituting black character area with average value, “data of ‘1’ is written at corresponding position in the frame memory” so that encoding efficiency can be improved, e.g. using code ‘1’ representing all pixels of black character). Contrast to Appellant’s assertion that a black character area is enlarged to eliminated the black character area from the color image, which is teach away from Suzuki, Katayama teaches edge detection and edge emphasis so that “an edge of a black character can be made sharp. A portion which is erroneous printed solid by conventional techniques can be clearly reproduced.” (col. 14 lines 44-47). Further, Katayama teaches that the substitution of the black character area “is not limited o a substitution with the average value, but can be extended to a substitution with a most frequent value.” (col. 15, lines 2-5). Thus, the substitution can theoretically be extended to a increased black density value. Therefore, there is no teach away existed. Finally, according to MPEP § 2143.01, the requirement of proposed modification or combination of primary reference and secondary reference is that the prior art would not change the principle of operation of the prior art invention being modified. Here, Katayama specifically mention that the substitution “can be extended to a substitution with a most frequent value.” Thus, no change of the principle of operation of Katayama’s invention by just increasing the substitute value, e.g., a pure black value taught by Suzuki, in the black character area. Therefore, Appellant’s argument that “Katayama teaches a **process for eliminating a black character**” (emphasis by the Examiner) is baseless and incorrect because there is no teach away between Kayama and Suzuki.

Regarding to argument of combination, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In the instant case, first, Katayama and Suzuki are in the image processing field, specifically in the field of correcting black character on color image. In addition, the claim language is open and broad. Katayama expressly teaches first three limitations (see final rejection paper#12). Although Katayama does not teach increasing density of black color such processing technique is taught by Suzuki (col. 5 lines 13-18). Moreover, Suzuki uses the technique to improve the image quality (Suzuki, abstract, col. 4 lines 45-51). Suzuki is cited, for sake of argument, to show that the scheme of increasing density of black is well known in the art. Finally, since the knowledge or suggestion to modify the teachings of the prior arts to produce the claimed invention are all contained in both Katayama and Suzuki, it has apparently taken in to account only knowledge from the patents themselves. The obviousness to combine the references is properly established. Also, according to the extensive discussion above related to the differences of Katayama and Suzuki, there are no change of the principle operation by combining the prior arts.

Therefore, such reconstruction is proper and *prima facie* case of obviousness has been established.

2. Appellants' argument---- Appellant further alleged that Katayama has an independent edge emphasis unit 212 that conducts completely independent process from the process of substitution. In addition, "the process of eliminating a black character to substitute for an average value is completely opposite to the process for emphasis a black character (an edge), which is well known for the art." Thus, there would not have been any motivation to on of ordinary skill in the art combine the edge emphasis unit 212 of Katayama with a density converter of Suzuki." (page 5, paragraph 2-3).

Examiner's response ---- The Examiner respectfully disagrees with Appellant.

First, in the Adversory Action, the Examiner argument was directed to the implication made by the Appellant that Katayama does not do edge emphasis, which is not directly related to arguments of this Appeal. Furthermore, the Examiner cited Suzuki for his scheme of "increasing at least a density of the black component in the image data includes color component and black component" (see paper #12). Generally, the scheme can be used in many places, not necessary for edge emphasis only. Moreover, the claim language is broad, where there is no any word to limit the function to either substitution or edge emphasis what so ever. Thus, there is no need to limit Suzuki as long as incorporating Suzuki does not change the principle of operation of Katayama. Finally, the reason why Katayama and Suzuki are not teaching away and why the combination of them is proper is explained regard to A(1).

(B) The following discussion relates to the rejection of 4-6, 14-16, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama and Suzuki, further in view of US 5430557 to Tamura et al.

1. Appellants' argument---- Appellant still further that since Katayama and Suzuki cannot be combined. The rejection to claims 4-6, 14-16 and 28-30 should be withdrawn.

Examiner's response ---- The Examiner respectfully disagrees with Appellant. As discussed in A above, a *prima facie* case (combining Katayama and Suzuki) of obviousness has been established.

(C) The following discussion relates to the rejection of claims 3, 13 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayama and Suzuki, further in view of US 5357353 to Hirata

1. Appellants' argument---- Appellant still further that since Katayama and Suzuki cannot be combined. The rejection to claims 3, 13 and 27 should be withdrawn.

Examiner's response ---- The Examiner respectfully disagrees with Appellant. As discussed in A above, a *prima facie* case (combining Katayama and Suzuki) of obviousness has been established.

**For the above reasons, it is believed that the rejections should be sustained.**

Respectfully submitted



Jingge Wu

Primary Examiner

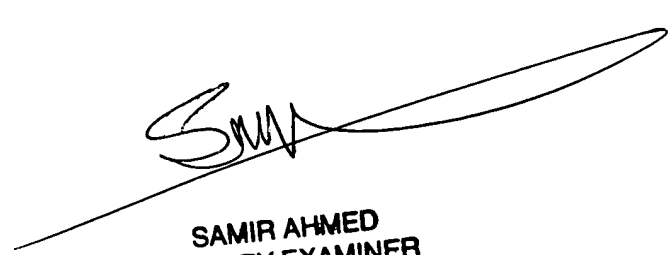
May 13, 2004

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